CCCACGCGTCCGGGCTTTGTCTCGTGGGCTGGTCCCCAGCGGCTCCCTCCCCGAACAGCTGCTGCTCCAGGGAGGAAGC

GGCGCGGGTGCTGTCCAGCTTCCCCGTGCTGAAAACCGGAGGGCTCGTCATCCACCACTACCATGTAAGGGCCATGAGA

```
                                    M   E   E   D   L   F   Q   L   R   Q   L   P   V    13
AGGGCTCATCCTGGCGCAGCGCGGAC ATG GAG GAG GAC TTA TTC CAG CTA AGG CAG CTG CCG GTT         39

     V   K   F   R   R   T   G   E   S   A   R   S   E   D   D   T   A   S   G   E    33
    GTG AAA TTC CGT CGC ACA GGC GAG AGT GCA AGG TCA GAG GAC GAC ACG GCT TCA GGA GAG    99

     H   E   V   Q   I   E   G   V   H   V   G   L   E   A   V   E   L   D   D   G    53
    CAT GAA GTC CAG ATT GAA GGG GTC CAC GTG GGC CTA GAG GCT GTG GAG CTG GAT GAT GGG   159

     A   A   V   P   K   E   F   A   N   P   T   D   D   T   F   M   V   E   D   A    73
    GCA GCT GTG CCC AAG GAG TTT GCC AAT CCC ACC GAT GAT ACT TTC ATG GTG GAA GAT GCA   219

     V   E   A   I   G   F   G   K   F   Q   W   K   L   S   V   L   T   G   L   A    93
    GTG GAA GCC ATT GGC TTT GGA AAA TTT CAG TGG AAG CTG TCT GTT CTC ACT GGC TTG GCT   279

     W   M   A   D   A   M   E   M   M   I   L   S   I   L   A   P   Q   L   H   C   113
    TGG ATG GCT GAT GCC ATG GAG ATG ATG ATC CTC AGC ATC CTG GCA CCA CAG CTG CAT TGC   339

     E   W   R   L   P   S   W   Q   V   A   L   L   T   S   V   V   F   V   G   M   133
    GAG TGG AGG CTC CCA AGC TGG CAG GTG GCA TTG CTG ACC TCG GTG GTC TTT GTA GGC ATG   399

     M   S   S   S   T   L   W   G   N   I   S   D   Q   Y   G   R   K   T   G   L   153
    ATG TCC AGC TCC ACG CTC TGG GGA AAT ATC TCA GAC CAG TAC GGC AGG AAA ACA GGG CTG   459

     K   I   S   V   L   W   T   L   Y   Y   G   I   L   S   A   F   A   P   V   Y   173
    AAG ATC AGC GTG CTG TGG ACT CTG TAC TAT GGC ATC CTT AGT GCA TTT GCG CCC GTG TAT   519

     S   W   I   L   V   L   R   G   L   V   G   F   G   I   G   G   V   P   Q   S   193
    AGC TGG ATC CTG GTG CTC CGG GGC CTG GTG GGC TTC GGG ATC GGA GGA GTT CCC CAG TCG   579

     V   T   L   Y   A   E   F   L   P   M   K   A   R   A   K   C   I   L   L   I   213
    GTG ACG CTG TAT GCC GAG TTC CTT CCC ATG AAA GCC AGA GCT AAA TGT ATT TTG CTG ATT   639

     E   V   F   W   A   I   G   T   V   F   E   V   V   L   A   V   F   V   M   P   233
    GAG GTA TTC TGG GCC ATC GGG ACA GTG TTC GAG GTC GTC CTG GCT GTG TTC GTG ATG CCC   699

     S   L   G   W   R   W   L   L   I   L   S   A   V   P   L   L   L   F   A   V   253
    AGC CTG GGC TGG CGT TGG CTG CTC ATC CTC TCA GCT GTC CCG CTC CTC CTC TTT GCC GTG   759

     L   C   F   W   L   P   E   S   A   R   Y   D   V   L   S   G   N   Q   E   K   273
    CTG TGT TTC TGG CTG CCT GAA AGT GCA AGG TAT GAT GTG CTG TCA GGG AAC CAG GAA AAG   819

     A   I   A   T   L   K   R   I   A   T   E   N   G   A   P   M   P   L   G   K   293
    GCA ATC GCC ACC TTA AAG AGG ATA GCA ACT GAA AAC GGA GCT CCC ATG CCG CTG GGG AAA   879

     L   I   I   S   R   Q   E   D   R   G   K   M   R   D   L   F   T   P   H   F   313
    CTC ATC ATC TCC AGA CAG GAA GAC CGA GGC AAA ATG AGG GAC CTT TTC ACA CCC CAT TTT   939

     R   W   T   T   L   L   L   W   F   I   W   F   S   N   A   F   S   Y   Y   G   333
    AGA TGG ACA ACT TTG CTG CTG TGG TTT ATA TGG TTT TCC AAT GCA TTC TCT TAC TAC GGG   999
```

Figure 1

```
  L   V   L   L   T   T   E   L   F   Q   A   G   D   V   C   G   I   S   S   R    353
TTA GTT CTA CTC ACC ACA GAA CTC TTC CAG GCA GGA GAT GTC TGC GGC ATC TCC AGT CGG  1059

  K   K   A   V   E   A   K   C   S   L   A   C   E   Y   L   S   E   E   D   Y    373
AAG AAG GCT GTA GAG GCA AAA TGC AGC CTG GCC TGC GAG TAC CTG AGT GAG GAG GAT TAC  1119

  M   D   L   L   W   T   T   L   S   E   F   P   G   V   L   V   T   L   W   I    393
ATG GAC TTG CTG TGG ACC ACC CTC TCT GAG TTT CCA GGT GTC CTT GTG ACT CTG TGG ATT  1179

  I   D   R   L   G   R   K   K   T   M   A   L   C   F   V   I   F   S   F   C    413
ATT GAC CGC CTG GGG CGC AAG AAG ACC ATG GCC CTG TGC TTT GTC ATC TTC TCC TTC TGC  1239

  S   L   L   L   F   I   C   V   G   R   N   V   L   T   L   L   L   F   I   A    433
AGC CTC CTG CTG TTT ATC TGT GTT GGA AGA AAT GTG CTC ACT CTG TTA CTC TTC ATT GCA  1299

  R   A   F   I   S   G   G   F   Q   A   A   Y   V   Y   T   P   E   V   Y   P    453
AGA GCG TTT ATT TCT GGA GGC TTT CAA GCG GCA TAT GTT TAC ACA CCT GAG GTC TAC CCC  1359

  T   A   T   R   A   L   G   L   G   T   C   S   G   M   A   R   V   G   A   L    473
ACG GCA ACG CGG GCC CTC GGC CTG GGC ACC TGC AGC GGC ATG GCA AGA GTG GGT GCT CTC  1419

  I   T   P   F   I   A   Q   V   M   L   E   S   S   V   Y   L   T   L   A   V    493
ATC ACT CCG TTC ATC GCC CAG GTG ATG CTG GAA TCC TCT GTG TAC CTG ACT CTG GCA GTT  1479

  Y   S   G   C   C   L   L   A   A   L   A   S   C   F   L   P   I   E   T   K    513
TAC AGT GGC TGC TGC CTC CTG GCT GCC CTG GCC TCC TGC TTT TTG CCC ATT GAG ACC AAA  1539

  G   G   G   L   Q   E   S   S   H   R   E   W   G   Q   E   M   V   G   R   G    533
GGC GGA GGA CTG CAG GAG TCC AGC CAC CGG GAG TGG GGC CAG GAG ATG GTC GGC CGA GGA  1599

  M   H   G   A   G   V   T   R   S   N   G   S   Q   E   *                       549
ATG CAC GGT GCA GGT GTT ACC AGG TCG AAC TCT GGC TCT CAG GAA TAG                  1647
```

TGACCGATGGGGGACTGAGCTGGTCTTTGAGGCTGCAGAGCTTGGGGGGCTGGCAGGCCCCAACTGGGGCACTGATTGT

CACTGCCGACATCAAGAACTCACCCAAGAGTATGACCTGGACCAACAGGGTTTTGTGTGTCTTGACTCAGTTTGCTCATCT

TCATTGAGGTCCACCCAGGGATGGGGAGATGTTTGCTCTAGGGGGGTTCTCTGTATATGTGGTGAAAGCTTTGTTCATAA

CCTGTGGATCTACATGGGAAGACTACCCATATTAGGAGGGTCTGGTAATGCCAGCAACCAATCAGACACCACCCAGAGT

CACCCGGCCAAACCCTCAGTGAACAACCAAAATATCTCTCTGTAGATACCGTCCAGGCTCAGGCCCATGTGACACCTGC

TGTCCACCCACCGGACCTGTTCAGTAGGTTTCTCCCACACCCACAGCCCCAGGCTTTCTTCTTTGAAATTGCAGGCGAT

CTAGGTGTGGTCTGAGCAGCTATTTCCTGGCAGGGGCCCCCCGGTTTGCCTCCCTAGAGCCTGACCAGTGGATTCTCTG

GCAGATGGACATGGTGCATTCAAACTGGAGCCACATGCCCCCACCCAGCCCCTNTTGGAGTTGCCCGTTGTTGGCACCA

AGAGATCCAGATGTGTCCTGGGGACAGCTGGGTCTTGCACCAGGTGACAACCTCAAAACGCCGTTACCCCCTGGGGAAC

TGAGGACTGAGSGCCAAGTG

Figure 1 continued

```
*wCFMAaFGGmFMFGWDTGVINgFvwMIdFhYRFgMmhydwtyYl....S
  + A+G    F W   V G +WM D + ++ ++     ++
132  EDAVEAIGF-GKFQWKLSVLTGLAWMADAMEMMILSILAPQLHCEWRLP    179


TMRWgLIVSIFnIGCMIGSIFfGWIgDMYGRRmsMMMvNvIFIIGIIIMI
+ + +L +S   ++G+M +S ++G+I+D YGR+ ++ ++++    +I+++
180  SWQVALLTSVVFVGMMSSSTLWGNISDQYGRKTGLKISVLWTLYYGILSA    229


fSinysWWMYIIGRIImGIGVGgISvlvPMYISEIAPkHlRGtMvSWYQL
F++   +  +++ R ++G+G+GG  + V +Y +E+ P + R +++ + ++
230  FAP--VYSWILVLRGLVGFGIGGVPQSVTLY-AEFLPMKARAKCILLIEV    276


MITiGIFIAYCfNYgfnyYnNdsWQWRWPLGLcFIWAIfMIIgMMFlPES
+++IG ++    +  +++ + +     WRW+L+L+++ +++ +++++LPES
277  FWAIGTVFEVVLAVFVMPSLG----WRWLLILSAVPLLLFAVLCFWLPES    322


PRWLVikGriEEARrsLqRlRgwdDVDpEIQEMMDeIeaMiEEElagNaS
R+ V+ G+ E+A ++L+R+ ++  + + +   + + ++        +
323  ARYDVLSGNQEKAIATLKRIATENGAPMPLGKLIISRQED-------RGK    365


WgELFrrrtPkMRWRiIMgMMIQiFQQFTGINYIMYYsTTIFesVGMq*
 + LF+ +    RW +++ +I+++      ++ YY+ ++ ++  +Q
366  MRDLFTPHF---RWTTLLLWFIWFSN------AFSYYGLVLLTTELFQ    404
```
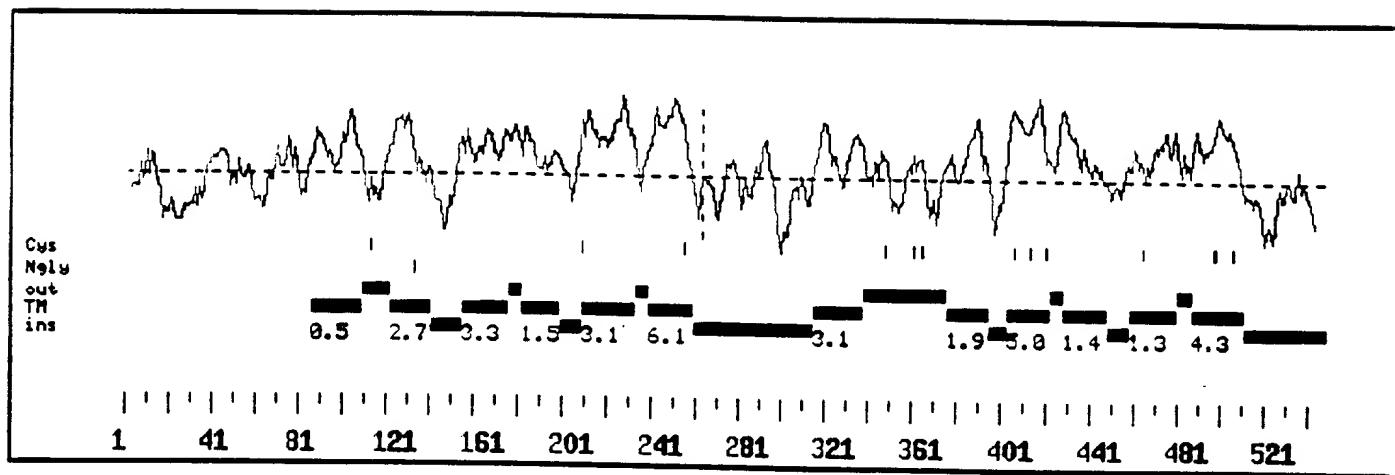
Figure 2

Figure 3

```
GTCGACCCACGCGTCCGAGCAAAGAGGATTACATGGACCTGCTGTGGACCACCCTGTCTG
AGTTCCCAGGTGTCCTTGTGACTCTGTGGGTCATCGACCGCCTGGGCCGCAAGAAGACCA
TGGCTCTGTGTTTCGTCATCTTTTCCCTCTGCAGCCTCCTGCTGTTCATCTGCATTGGAA
GAAATGTGCTAACCCTCTTACTGTTCATTGCAAGAGCGTTTATTTCTGGAGGCTTCCAAG
CAGCCTACGTTTACACGCCTGAGGTGTATCCAACGGCGACGAGGGCGCTGGGCCTGGGCA
CCTGCAGCGGCATGGCGAGAGTGGGCGCGCTCATCACTCCATTCATAGCTCAGGTGATGC
TGGAATCTTCCGTGTACCTGACCCTGGCCGTCTACAGTGGCTGCTGCCTCCTTGCTGCCT
TGGCCTCCTGCTTTCTGCCCATCGAGACCAAAGGCCGAGCACTGCAGGAGTCCAGCCACC
GGGAGTGGGGCCAGGAGATGGTTGGCCGAGGGACAAACAGCACAGGCGTCCCCAGGTCGA
ACTCTGGCTCTCAGGAGTAGTGACCCCTGGGAGTTGAGCTGGTCTTTGAGGCCGGAGCCT
AGAAAGCTGGCAGAGCCCAGCTGGGCCACTAACGGTCACTGCCGACATCAAGAACTTTCC
CCGAGTGGGCGAAGTGAACCGACAGGGTTTTGTGTCTTCACTGTGTTTGGCCTATGTTCA
TCGAGGGTTGCCCGCCCCAGGAAGATGGGGCTGCATTCACTCCAGGGGGTTCTTCCGTGG
TGGGGGAAAGGGTTGGTACGTCGCCGTGGATCTGCATGGGGGAAGCTGCTAGTGTGGGAG
GGTCCCAGGGCGCTCAGGGCCAGCTGAGCAGATGTCACGTGGTTACCCAGTCATACCCTT
GGAGAGCCACTGTCCAAAGATCTCCATAGATACAGTCTCAGCCCAGACCCCTGTGACACC
CGCCATTTTGTCCAGTAAGTTTCTCCTGCACCCTGGCCCCAGGATGTCTTTGGAATTAAG
ACAAGCTAATTAGTGTCCGACTAGAGCAGCTTTTCTGGAGCCTGAGACACCCCCCTCCCC
GTTGCTTCCTTGGTTGGGCCCCTCTAGATGTCTCTTCAGGGCCTGCCGGGTAGAAACTGA
CTGAAGAATGTGCTTGTGAATTTGAGCCAAGCATCATCCCCCATTGACCCCTTCTGGAGC
CTCTGTCTCTGGCTGCAGAGGGTCCTGTTATATTTCTGGGGAGAGCTAGGTACCCACCAG
GCGACAGACCCAGAAAATTGTTAACCCATTCCCTGTCTTGGAAATCGGAGAGTGAGGCCT
AGCAGAGGGGAGACTAAGGGCCAAAACCAAAGCCAGAGTCACCCCTGAAGCAGTTAGGGC
CTTTCTGGGCCCTCTCTCTTACCCTCCCACCCCCACTCAGCCCCACTACATAGCGAGTCC
CGGTTTCCTCAGGCTTCCAGACTCGTCTGTGTGTAGGTGGCGGCATGAGCTTAGGGATCT
CCATGGCAAAGCACCAAGTGCCGGCCCATTAAGTCTTGGGACGGAGAACCTGTTGCCCCT
TCCGGCTCTGCCTCTGCTTTCTCTCCTGCTCCTCTGTCAAGGGCAGGGCTGGTCCTACAG
AGGCGGGTCCCGGGAGGATGTCCCGGCTCGAGGATCAGGAAAGCCCATCTCAGAGGGAGA
CAGGAGGCTGTTGTCTTGGCCTCAGGAGGAAGGTAGGTCTGAAGGCAGTCCACGTGTACT
CCCGGATTCCGGAACGCACGAGCCGCCCCTCTGAGATTCAGGAAAGAAGCACGCAGGGGG
AGGAAGGAGATGGCCAGGCCCCAATCAAAGGCCAGAGGAAACTGGCCGCTTTGCTTGATG
GACACCTCGCAAGGGAGCCAAATGTGCGTTGTGCGCTCATCTCTTA
```

Figure 4